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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,334	01/15/2004	James R. Gallivan	PD-02W167	6419
7590	08/09/2005		EXAMINER TRIEU, VAN THANH	
Thomas J. Finn Raytheon Company P.O. Box 902 (EO/E4/N119) EL SEGUNDO, CA 90245-0902			ART UNIT 2636	PAPER NUMBER

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/758,334

Applicant(s)

GALLIVAN ET AL

Examiner

Van T. Trieu

Art Unit

2636

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,11,14,15,17-22,26 and 28 is/are rejected.
- 7) ☒ Claim(s) 3,4,8-10,12,13,16,23-25 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 5, 7, 11, 14, 15, 17, 22, 26 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by **Nishiguchi et al** [US 6,535,159].

Regarding claim 1, the claimed area protection system comprising an active-array antenna to generate a high-power millimeter wave (MMW) wavefront to detect an intruder within a protected area (the radar system 1 includes a MMW RF unit 10 to generate a MMW band to an array antenna 9 for detecting criminal within a detected area, see Fig. 1, col. 14, lines 42-47, col. 15, lines 5-13 and col. 22, lines 61-62); and one or more reflectors positioned within the protected area to help retain energy of the wavefront within the area (the plurality of reflection members 2A-2D are positioned within the detected area for regenerating of higher energy within the detected area, see Figs. 4-6 and 10-20, col. 2, lines 30-44, col. 17, lines 60-67 and col. 18, lines 1-40).

Regarding claim 5, the claimed one or more reflectors are positioned to increase an energy density of the wavefront in a predetermined location of the area, see Figs. 4-6, col. 17, lines 60-67 and col. 18, lines 1-40.

Regarding claim 7, all the claimed subject matters are cited in respect to claim 1 above.

Regarding claim 11, all the claimed subject matters are cited in respect to claim 7 above, and including the beam director (the beam course, see Fig. 20, col. 25, lines 49-59).

Regarding claim 14, the claimed illuminator to detect the intruder based on movement, which reads upon the illuminating area A to specify the moving direction of a criminal person, see Figs. 3, 5b, 6b and 10-18, col. 3, lines 31-42.

Regarding claim 15, all the claimed subject matters are cited in respect to claim 14 above, and including the radar illumination, see Figs. 1, 3, 5b, 6b and 10-18.

Regarding claim 17, the claimed passive detection subsystem comprises one of an IR sensor, an optical sensor, a sonic sensor or an ultrasonic sensor to detect the presence of the intruder, which reads upon the IR and/or ultrasonic wave may be adapted, see col. 7, lines 5-10, col. 13, lines 1-3 and col. 27, lines 58-62.

Regarding claim 22, the method claimed limitations are met by the apparatus claim 1 above.

Art Unit: 2636

Regarding claim 26, all the claimed subject matters are cited in respect to claims 11 and 22 above.

Regarding claim 28, all the claimed subject matters are cited in respect to claims 14, 15 and 22 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 6, 18-21 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nishiguchi et al** [US 6,535,159] in view of **Foss et al** [US 4,654,622].

Regarding claim 6, **Nishiguchi et al** fails to disclose the array antenna comprises a plurality of semiconductor wafers arranged together on a substantially flat surface, wherein each semiconductor waver comprises power amplifier and a transmit antenna to generate the high-power wavefront. However, **Nishiguchi et al** teaches that the RF array antenna 9 has an array shape to radiate/receive of millimeter-wave band having a strong linear property. The array antenna 9 has a wave irradiation means or reflected wave detection means, see Fig. 1, col. 15, lines 8-10 and col. 22, lines 58-64. **Foss et al** suggests that a planar array antenna comprising a plurality of micro-sensors 13 for millimeter-wave sensing deposited on the surface of the silicon wafer 10. The planar array antenna also includes a bipolar pre-amp array 30 and an FET multiplexer 31, see Figs. 2a, 2b4 and 6, col. 1, lines 7-23, col. 2, lines 25-66. Therefore, it would have been obvious to one skill in the art at the time the invention was made to substitute the planar array antenna of **Foss et al** for the array antenna of **Nishiguchi et al** since both antennas are for radiating and sensing of reflected signals in millimeter-wave band.

Regarding claims 18-20, all the claimed subject matters are discussed between **Nishiguchi et al** and **Foss et al** in respect to claims 6 and 7 above.

Regarding claims 29, all the claimed subject matters are discussed between **Nishiguchi et al** and **Foss et al** in respect to claims 5, 6 and 22 above.

Conclusion

3. Claims 3, 4, 8-10, 12, 13, 16, 23-25 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Piesinger discloses an intrusion detection, tracking and identification comprising a series of ultrasonic transducers or antennas will be placed underwater offshore just beyond the swimming area and parallel to the beach being protected. The array of transducers or antennas acts as a widely spaced "picket fence", which monitors the waters outside the swimming area. [US 6,922,145]

Barnes et al discloses an antenna array comprising a ground plane and a plurality of elements mounted thereon and being capable of emitting and receiving ultra wideband emissions from a plurality of reflectors. [US 6,667,724]

Edwards et al discloses a method and apparatus for detecting a security threat in a zone, comprising a transmitting within the zone directs a first microwave signal to a reflector. The reflector doubles the frequency and re-radiates it to a receiver for detecting of an intruder within the zone. [US 4,684,929]

5. Any inquiry concerning this communication or earlier communications from examiner should be directed to primary examiner **Van Trieu** whose telephone number

Art Unit: 2636

is (571) 272-2972 and Examiner's facsimile No. (573) 273-2972. The examiner can normally be reached on Mon-Fri from 7:00 AM to 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. **Jeffery Hofsass** can be reached on (571) 272-2981.

A handwritten signature in black ink, appearing to read 'Van Trieu', with a long, sweeping horizontal stroke extending to the right.

Van Trieu
Primary Examiner
Date: 8/4/05